REMARKS / ARGUMENTS

In complete response to the Office Action dated July 1, 2005, on the above identified application, reconsideration is respectfully requested. Claims 11-37 are pending in this application.

Claim Rejections Under 35 U.S.C. § 103:

Claims 11 – 13 and 17 – 27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kelkar et al '833 in view of Fein '898. Applicants respectfully submit that the present invention is not unpatentable over Kelkar et al '833 in view of Fein '898. Applicant respectfully submits that there is no motivation to combine Kelkar et al '833 and Fein '898.

Kelkar et al '833 discloses a plasma arc torch and method for cutting a work piece, wherein bleed holes place the primary and secondary gases in communication with one another, and whereby the primary and secondary gasses are thus co-mingled. These bleed holes are located such that the admixture of primary and secondary gas is present upstream of the central exit opening, and thus becomes part of all of the secondary gas that exits the nozzle. The blended primary and secondary gas mixture is directed away from the plasma arc by the shield cap and tip design, but the plasma arc itself is comprised exclusively of primary gas.

Fein '898 discloses a plasma arc torch wherein the plasma gas and the blanket gas are not in communication with one another, and the water is introduced into the plasma jet at a point near the base of the arc. The plasma arc itself is composed exclusively of primary gas, and the shielding gas is composed exclusively of secondary gas. Fein '898 only mentions a shielding or blanketing gas in passing, and fails to provide written description or enablement that is adequate to instruct the skilled artisan how the combination of primary plasma gas, shielding gas and the water injection are to be used in unison.

Kelkar et al '833 notes that this system results in a more stable plasma arc, and that the secondary gas floods the kerf region improves welding quality. In contrast, Fein '898 notes that by injecting water directly into the plasma jet, an exothermic reaction

takes place during the recombination of hydrogen and oxygen, which produces useful heat in the vicinity of the cut.

The basic operating principles of these two methods are sufficiently different to suggest that one skilled in the art would not look to Fein '898 to modify the teachings of Kelkar et al. '833. It would not be clear to one skilled in the art that whatever function the blanketing gas may serve with respect to Fein '898, in light of the water introduction, would be sufficiently identical to the function that shielding gas would serve with respect to Kelkar et al '833. Applicant therefore submits that there is no motivation to combine Kelkar et al. '833 and Fein '898.

Claims 14 - 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kelkar et al '833 in view of Fein '898 as applied above, and further in view of Gourlaouen et al. '687. Applicants respectfully submit that the present invention is not unpatentable over Kelkar et al '833 in view of Fein '898 and further in view of Gourlaouen et al. '687. Applicant respectfully submits that there is no motivation to combine Kelkar et al '833, Fein '898 and Gourlaouen et al. '687.

As Applicant stated previously, and the Examiner acknowledges, Gourlaouen et al. '687 does not disclose a plasma torch, but a "thermal treatment process permitting producing a surface coating on an object. (Column 1, lines 19-20) The Examiner notes that Gourlaouen et al. '687 is referenced in order to indicate that the percentages of hydrogen content in a central gas flow are conventional. Applicants respectfully argue that what are conventional hydrogen contents in the type of thermal treating process that is disclosed in Gourlaouen et al. '687 are not necessarily indicative of what the artisan skilled in the art of plasma welding would find to be conventional hydrogen contents in a shielding gas. Applications also respectfully point out that the specific hydrogen percentage that the Examiner is identifying is part of a ternary mixture of helium, argon and hydrogen, which is entirely different from the present invention.

It would not be clear to one skilled in the art that whatever benefits this ternary plasmagenic gas mixture may have with respect to Gourlaouen et al '898, would be sufficiently identical to the function that shielding gas would serve with respect to either Kelkar et al '833 or Fein '898. Applicant therefore submits that there is no motivation to combine Gourlaouen et al. 898 with Kelkar et al. '833 and Fein '898.

Hence, it is believed that the basis of rejection deserves reconsideration and is respectfully traversed.

CONCLUSION

Accordingly, it is believed that the present application now stands in condition for allowance. Early notice to this effect is earnestly solicited. Should the Examiner believe a telephone call would expedite the prosecution of the application, he is invited to call the undersigned attorney at the number listed below.

Respectfully submitted,

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CERTIFICATE OF MAILING UNDER 37 CFR 1.8(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 31st day of August, 2005.

Diana Guzman